

REMARKS

The above-captioned patent application has been carefully reviewed in light of the non-final Office Action to which this Amendment is directed. Claims 3, 6, 7, 11, 15-20, 56, 58, and 62-66 have been further amended in an effort to further clarify and distinctly describe that which is regarded as the present invention. Claim 67 has been canceled. To that end, it is believed no new matter has been added.

Claims 3, 6-22, 56-59, and 62-67 are pending. The Examiner has rejected all of the above pending claims on the basis of certain prior art. More specifically, the Examiner has rejected all of the pending claims under 35 USC §102(b) as being unpatentable over Jakubowicz (U.S. Patent No. 5,244,633) and Claims 3, 6-22, 56-59, and 62-71 as being unpatentable over Miller, Muszak et al. or Carey et al. in view of Hamilton under 35 USC §103(a). Applicant herein respectfully requests reconsideration based on the amended claims, as well as the following discussion.

Turning first to the prior art rejection based on Jakubowicz '633, and in order to anticipate under the Statute, each and every claimed limitation must be found or its substantial equivalent in the single cited reference. Those limitations that are not found must be notoriously well known to one of ordinary skill in the field of the invention at the time thereof.

Jakubowicz '633 relates to an incubator that includes a pair of rotors or rings, each of the rotors having a number of receiving areas there within. As noted in previous correspondence, the instant '633 reference does not utilize slide elements, but rather utilizes a series of cup-like reaction vessels or cuvettes that are placed in each of the plurality of receiving areas. These cuvettes appear to be initially loaded into the outer ring by some form of device (which is neither shown nor described in this reference) that vertically loads the cuvettes by dropping or otherwise placing them into an appropriate receiving area. Therefore, the cuvettes are not radially loaded into the incubator nor is any device shown or suggested that is capable of such a function.

Another significant difference noted in previous correspondence by Applicant is that Jakubowicz '633 does not utilize a reciprocating pusher blade assembly to effect loading and movement of elements into or through the ring structure of their incubator. It is further submitted that a reciprocating pusher blade assembly would not be functionally effective in order to move the cuvettes that are illustrated by this primary reference. As is readily apparent from this reference, the cuvettes cannot simply be supported at their bottom ends due to their cup-shaped design, as opposed to the relatively flat planar support design that comprises slide elements.

Referring back to the cited reference, the push/pull rod mechanism, see Fig. 14 of Jakubowicz '633, that is used to move the cuvettes between the outer ring and the inner ring is described at col. 6, line 59 – col. 7, line 27, and is referred to as a transfer means 200 comprising a push rod 202, 204. As described therein, each of the rods are used for a specific aspect of transfer wherein rod 202 is used to effectuate transfer between the outer ring and the inner ring and the remaining rod 204 is used to effectuate transfer from the inner ring to a dump station (not shown). Each rod 202, 204 includes a terminal lip 206 that is disposed sufficiently to engage the interior of a cuvette at the top of the cuvette and wherein each rod is pulled toward axis 55. See Figs. 14-16. As such, a two part operation is necessary to effectuate transfer using each of the two rods and in which support is required at the top of the cuvette in order to effectively transfer the cuvette between the rings of the incubator.

Reciprocating pusher blade assemblies are specifically designed to support slide elements because these latter elements do not have a high aspect ratio in terms of height/width (diameter). The cuvettes of Jakubowicz, however, could not be maintained successfully for movement using a pusher blade without tipping of the cuvette and its contents. If a pusher blade assembly were utilized in order to effectuate movement of the cuvettes of Jakubowicz '633, there would be no stability afforded for the upper portions of the cuvettes and as such these elements could tip and spill their liquid contents. As a result, it is believed such support would not be

desired, mandating the use of the rod mechanism as described by Jakubowicz or a similar structure in order to support the upper portions of the cuvette and prevent tipping. Therefore, it is believed that neither the cuvettes nor the push/pull rod mechanism are suitable structural equivalents to the slide elements and the reciprocating pusher blade assemblies presently recited by Claims 62 and 63 of the present invention and that a person of ordinary skill in the field would not be motivated to make such substitutions.

Moreover, the present apparatus and method employs at least two reciprocating pusher blade assemblies, each of which is capable of moving a slide element not only between the rings of the incubator, but also for movement into and out of the incubator wherein each of these movements is accomplished within a common horizontal plane. As previously noted, Jakubowicz '633 fails to teach any means of loading their cuvettes into the receiving areas of their incubator within a common horizontal plane. On the other hand, the pusher blade assemblies of Applicant's incubator can permit loading and unloading as well as radial movement between slide element receiving areas. Moreover, the reciprocating pusher blade assemblies can be provided at different circumferential or radial locations. For example, at least one second drive mechanism having a reciprocating pusher blade assembly, can be provided in relation to the outer ring and at least one second drive mechanism, also having a corresponding reciprocating pusher blade assembly, can be provided in relation to the inner ring. Other variations are possible. For example, a plurality of pusher blade assemblies can be disposed at various circumferential locations about the outer ring to enable slide elements to be selectively loaded and/or moved between the inner and outer rings of the incubator as the rings are being rotated by at least one first drive mechanism.

Each of independent Claims 62 and 63 have been amended to clearly recite the above features. More particularly, Claim 62 has been amended to specify and more definitely point out and distinctly describe the use of at least two second drive mechanisms for selectively moving slide elements in a radial direction exclusively within a common horizontal plane. This permits slide elements to be loaded and

unloaded from the incubator and also permits movement of slide elements between first and second pluralities of slide element receiving areas. According to this claim, each of the second drive mechanisms includes at least one reciprocating pusher blade assembly for moving slide elements between the inner and outer rings of the incubator and for loading elements into at least one of the inner and outer ring. Support for these amendments is found in the present specification and drawings; see, for example, page 15, lines 1-22, and Figs. 10-12.

As noted above, Jakubowicz '633 fails to include any means for loading slide elements and moving slide elements between rings of an incubator.

Claim 63 has been amended to specify that radial loading and moving steps are performed in relation to an incubator structure and further within a common horizontal plane, exclusively, using slide elements and at least two reciprocating pusher blade assemblies that are disposed to effectuate these steps.

Because Jakubowicz '633 fails to describe or even suggest the foregoing features, it is believed that a statutory anticipation rejection of Claims 62 or 63 cannot be maintained. Reconsideration is therefore respectfully requested. Each of the remaining pending Claims 3, 6-22, 56-59 and 63-66 are also believed to be allowable for the same reasons in that these claims depend from Claims 62 and 63 and include additional features. Reconsideration is therefore respectfully requested.

With regard to the Section 103 rejection, Applicant herein respectfully traverses this rejection. In order to maintain a successful "*prima facie*" obviousness rejection under the Statute, each and every claimed limitation must be found in the cited prior art, either singly or in combination. Those limitations that are not found in or are suggested by the prior art must be notoriously well known in the field of the invention at the time thereof. To that end, there must be no impermissible hindsight (i.e., advance knowledge) of the invention.

As to the cited prior art, and as previously noted, Miller describes a twin rotor incubator assembly for a clinical analyzer. This incubator assembly includes a pair of independently driven, vertically stacked rotors 52, 54 that are interconnected by means of an elevator assembly relative to a metering station. The rotors are not

provided on a common horizontal plane. As slide elements are metered, the elements are brought into either of the vertically stacked rotors using a pusher blade assembly. In order to move any of the sample elements between these stacked and offset rings, however, there must be a vertical component of movement in order to access one of the rotors. That is to say, all movement is not exclusively made within a common horizontal plane. According to this reference and in order to move sample elements between the vertically stacked ring elements in order to "free up" space, for example, in one of the rings, a slide element must first be removed from one of the rings, loaded onto the elevator assembly, raised or lowered, and then reloaded horizontally into the remaining ring. That is to say, the sample element receiving areas of the first and second rotors are not provided on a common horizontal plane and therefore movement of slide elements between the slide element receiving areas of the rotors can not occur exclusively along a common horizontal plane. This reference fails to disclose a relationship between first and second pluralities of slide element receiving areas that would permit radial movement therebetween wherein slide elements are loaded and unloaded into the incubator and movement between inner and outer rings is accomplished exclusively and radially within a common horizontal plane.

Muszak et al. teaches the elevator assembly that is used by the Miller incubator. As such, this reference elevator fails to provide or suggest any structure or a resulting mechanism that permits or suggests radial transport exclusively along a common horizontal plane for loading slide elements into the incubator and movement between radially adjacent slide element receiving areas that are disposed on coplanarly arranged inner and outer rings.

Carey et al. describes an incubator assembly that is used to handle multiple assays in an immunoassay clinical analyzer. The incubator includes a housing having a single cuvette ring that includes a plurality of circumferential slots, each sized for receiving a cuvette. The cuvette ring is disposed above a magnet ring used in conjunction with a drive assembly 18 to drive the cuvette ring. The cuvette ring is driven radially so as to pass a plurality of circumferentially arranged stations,

including read stations. In addition, a number of other circumferentially disposed stations are positioned outside of the incubator housing as used to dispense reagents, wash fluids, and perform other assay reaction steps. The cuvettes are not moved to positions other than the cuvette ring during any read, aspirate or dispense operation utilizing the exterior disposed stations. This incubator also includes an elevator assembly, as described at col. 18, lines 56-67, wherein a cuvette can be lifted from a slot to permit a new cuvette to be added to take a now empty slot in the cuvette ring. This reference is vastly different from that of Claims 62, 63 for failing to teach, describe or otherwise suggest radially adjacent rings having slide element receiving areas wherein movement can be achieved exclusively between the rings and into the incubator along a common horizontal plane.

Finally, Hamilton et al. describes a slide distributor for the delivery and removal of slide elements from an incubator. See col. 1, lines 9-11. The slide distributor is defined by a single shuttle mechanism located outside of the incubator housing that can be used to either load or unload slide elements from an incubator. The shuttle mechanism includes a single pusher blade assembly having a picker to enable the slide elements to be loaded and/or unloaded from the single ring incubator.

As noted above, each of the independent Claims 62 and 63 have now been amended to specifically indicate that the incubator comprises at least two second drive mechanisms (reciprocating pusher blade assemblies) that enable radial movement either into and/or out of the incubator, as well as radial movement between the inner and outer rings. All movement is achieved along a common horizontal plane with regard to the slide elements as to the recited radial loading and radial moving steps. Support is found repletely in the present application, see, for example Figs. 10-12, and therefore it is believed that no new matter has been added.

To that end, it is believed that a "*prima facie*" obviousness rejection cannot be maintained based on the cited art. The combination of the cited art fails to provide the structure of the invention that is now positively recited in independent Claim 62. That is, none of the cited prior art, either singly or in combination,

provides an incubator having an inner and an outer ring wherein the inner ring includes a first plurality of circumferentially disposed slide element receiving areas and the inner ring includes a second plurality of slide element receiving areas. As previously noted, each of the primary references to Muszak et al. and Miller define first and second pluralities of slide element receiving areas, but in which the areas are not radially adjacent or at least in which movement cannot occur exclusively between the areas and into the incubator along a common horizontal plane. Hamilton refers to a single rotor incubator design while Carey describes an incubator that transfers cuvettes and does not include means for transferring or shuttling slide elements between rings exclusively on a common horizontal plane.

Moreover, none of the cited art alone or in combination, recites or suggests at least two reciprocating pusher blade assemblies that selectively moves slide elements exclusively in a radial direction along the horizontal plane common to the first and second plurality of slide element receiving areas, as well as in relation to apparatus disposed outside the incubator housing. Since Miller and Muszak et al. specifically require the rings be vertically stacked, the sample element receiving areas cannot be formed within a common horizontal plane as required by each of independent Claims 62 and 63. Carey and Hamilton each relate to single ring structures only. Moreover and as previously noted, Carey does not relate at all to the transfer of slide elements, but rather to cuvettes, whose design does not permit transfer successful and reliably if using reciprocating pusher blade assemblies. In addition and like Jakubowicz '633, it is believed that the cuvettes of Carey et al. cannot be loaded radially into the outer ring and therefore they must be loaded vertically. As such, exclusive radial movement is not possible as required by the claims. For the foregoing reasons, it is believed that a prima facie obviousness rejection cannot be made regarding Claims 62 and 63.

Each of Claims 3, 6-22, 56-59, and 64-66 are believed allowable since these claims depend from Claim 62 and 63. Reconsideration is respectfully requested.

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Claims 3, 6, 7, 11, 15-20, 56, 58 and 64-66 have been amended to comport with the amendments made to Claims 62 and 63 and also to correct certain typographic and grammatical errata that was not previously detected. No new matter has been added.

In summary, it is believed the above-captioned patent application is now in an allowable condition and such allowance is earnestly solicited.

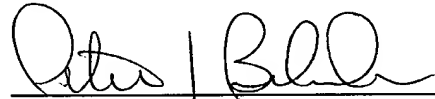
If the Examiner wishes to expedite disposition of the above-captioned patent application, he is invited to contact Applicants' representative at the telephone number below.

The Director is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289.

Respectfully submitted,

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